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Atty Dckt No. PI-ST-0307US (Formerly Docket No. 5831.58/P/CIP/Re/C)

AMENDMENT

REMARKS

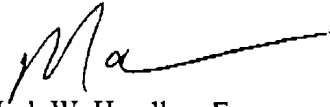
Applicant herein amends Claims 7 and 23, as previously allowed in the Notice of Allowability mailed August 8, 2005, and submits a Supplemental Declaration For Reissue (FORM PTO/SB/51S) as requested by the Office.

Claims 7 and 29 were previously amended by Examiner's Amendment after submission of a prior Supplemental Declaration, to amend Claim 7 to depend from Claim 1, and to amend Claim 29 to depend from Claim 23. The previous Amendment is set forth above and submitted with a new Supplemental Declaration. Reconsideration and Issuance of the present Reissue Application as a patent are respectfully requested. The issue fee has previously been paid.

A clean copy of the pending claims, as amended, for the present Application are set forth in the following pages beginning on page 3. Amendments to the Claims are shown on page 17.

The U.S. Patent & Trademark Office is hereby authorized to charge any fees due or credit any overpayments to Deposit Account No. 502112/PI-ST-0307US for the firm CHAUZA & HANDLEY, L.L.P.

Respectfully submitted,

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October 24, 2006

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(c) a cam adapted to move the position of said bending plate laterally with respect to said support member and thereby urge said free end portions into contact with the terminal balls.

24. (Previously Added) Apparatus as defined in Claim 23 wherein said free end portion of each of said contact members has a generally central and the extreme end of said end portion is deviated from said generally central axis.

25. (Previously Amended) Apparatus as defined in Claim 24 wherein each said extreme end portion extends into an open space in said support member but does not extend through said open space in said support member.

26. (Previously Added) Apparatus as defined in Claim 23 wherein said cam contacts and moves said bending member.

27. (Cancelled).

28. (Previously Added) Apparatus as defined in Claim 26 further comprising spring means to urge said bending plate laterally with respect to said support member.

29. (Amended) Apparatus as defined in Claim 23 further comprising spring means to urge said support member laterally with respect to said bending plate.

30. (Previously Amended) Apparatus as defined in Claim 24 wherein the extreme end of said free end portion of each of said contact members extends beneath a face of the ball grid array device from which said terminal balls depend a sufficient distance to contact a terminal ball between the center of the terminal ball and the face of the device from which such terminal ball depends.

31. (Previously Amended) Apparatus as defined in Claim 23 further comprising

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spacers removeably affixed adjacent said support face to at least partially locate the periphery of a ball grid array device relative to said support member.

32. (Previously Amended) Apparatus for mounting a ball grid array device, the ball grid array device having terminal balls depending from one face of the ball grid array device, and said apparatus comprising:

5 (a) a support member having a support face on which said ball grid array device is located relative to said support member;

(b) a base member;

(c) biasing means having apertures therein substantially corresponding with the locations of said terminal balls;

10 (d) a plurality of elongated contact members anchored in said base member, each having an interconnection end and a free end portion disposed on opposite sides of a central section with said central section projecting through an aperture in said biasing means and said free end portion defining a generally central axis with the extreme end portion of said free end portion deviated from said central axis and positioned adjacent a respective one of said terminal balls of said ball grid
15 array device; and

(e) means for moving said free end portions with respect to said support member and into contact with respective ones of said terminal balls.

33. (Previously Amended) Apparatus as defined in Claim 32 wherein each said extreme end portion extends into an open space in said support member but does not extend through said open space in said support member.

34. (Previously Amended) Apparatus as defined in Claim 32 further comprising spacers removably affixed adjacent said support face to at least partially locate the periphery of ball grid array devices relative to said support face.

35. (Previously Amended) The combination comprising:

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(a) a ball grid array device having a first face and a plurality of terminal balls depending from said first face in a predetermined pattern, each of said terminal balls defining a geometric center spaced from said first face; and

5 (b) mounting apparatus comprising:

(i) a support member adjacent to which said ball grid array device is located;

(ii) a base member;

10 (iii) a bending plate having apertures therein substantially corresponding with said terminal balls positioned between said base member and said support member; and

15 (iv) a plurality of elongated contact members, each having an interconnection end and a free end portion disposed on opposite sides of a central section with said central section projecting through an aperture in said bending plate and said free end portion positioned adjacent to a respective one of said terminal balls and terminating between said first face of said ball grid array and the geometric center of said respective one of said terminal balls.

36. (Previously Added) The combination defined in Claim 35 wherein said free end portion of each of said contact members has a generally central axis and the extreme end of said end portion is deviated from said generally central axis.

37. (Previously Amended) The combination defined in Claim 36, wherein each said extreme end portion extends into an open space in said support member but does not extend through said open space in said support member.

38. (Previously Amended) The combination defined in Claim 35 including means for moving said free end portion with respect to the terminal balls depending from the face of the ball grid array device.

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39. (Previously Added) The combination defined in Claim 38 wherein said means for moving comprises a rotatable cam adjacent said bending plate which, when rotated, coacts with said bending plate to move said plate laterally with respect to said support member.

40. (Previously Added) The combination defined in Claim 39 wherein said means for moving includes a spring positioned to urge said bending plate laterally with respect to said support member.

41. (Previously Added) The combination defined in Claim 38 wherein said means for moving comprises a rotatable cam adjacent said support member which, when rotated, coacts with said support member to move said support member laterally with respect to said bending plate.

42. (Previously Added) The combination defined in Claim 41 wherein said means for moving includes a spring positioned to urge said support means laterally with respect to said bending plate.

43. (Previously Amended) Apparatus for mounting a ball grid array device, the ball grid array device having terminal balls depending from the ball grid array device, and said apparatus comprising:

5 (a) a support member having at least one support surface against which the ball grid array device is disposed to locate the ball grid array device in a desired position relative to said support member;

(b) a base member;

10 (c) a bending plate having apertures therein substantially corresponding with the terminal balls, said bending plate positioned between said base member and said support member and adapted for lateral movement with respect to said support member;

(d) a plurality of elongated contact members anchored in said base

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15 member, each having an interconnection end and a free end portion disposed on opposite sides of a central section with said central section projecting through an aperture in said bending plate and said free end portion positioned adjacent to a respective one of the terminal balls; and

(e) a cam adapted to move the position of said bending plate laterally with respect to said support member and thereby move said free end portions against respective ones of the terminal balls.

44. (Previously Amended) Apparatus for mounting a ball grid array device, the ball grid array device having terminal balls depending from one face of the ball grid array device, and said apparatus comprising:

(a) a base member;

5 (b) a support member having a support face against which the ball grid array device is located, with said terminal balls extending toward said base member;

(c) biasing means having apertures therein substantially corresponding with said terminal balls, said biasing means positioned between said base member and said support face of said support member;

10 (d) a plurality of elongated contact members anchored in said base member, each having an interconnection end and a free end portion disposed on opposite sides of a central section with said central section projecting through an aperture in said biasing means and said free end portion having an extreme end portion thereof positioned adjacent respective ones of the terminal balls; and

15 (e) means for moving said free end portions with respect to said terminal balls,

45. (Previously Added) Apparatus as defined in Claim 44, wherein said terminal balls extend downward from said support face, and said base member is disposed beneath said support face.

46. (Previously Added) Apparatus as defined in Claim 44 wherein each said extreme

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end portion extends into an open space in said support member but does not extend through said open space in said support member.

47.(Previously Added) Apparatus for mounting a ball grid array device, the ball grid array device having an array of terminal balls depending from the ball grid array device, and said apparatus comprising:

5 (a) a support member having a support face, wherein the ball grid array device is positioned on said support face such that at least a portion of said support face supportingly engages the ball grid array device;

(b) a base member;

10 (c) a bending plate having apertures therein substantially corresponding in relative relation with the terminal balls depending from the ball grid array device, and adapted for lateral movement with respect to said support member;

15 (d) a plurality of elongated contact members anchored in said base member, each having an interconnection end and a free end portion disposed on opposite sides of a central section, with said central section projecting through a respective one of said apertures in said bending plate and said free end portion positioned to extend adjacent to a respective one of the terminal balls of the ball grid array device; and

20 (e) a cam adapted to move the position of said bending plate laterally with respect to said support member and thereby urge said free end portions of said elongated contact members into contact with the respective ones of the terminal balls.

48.(Previously Added) Apparatus as defined in Claim 47 wherein said free end portion of each of said contact members has a generally central axis and the extreme end of said end portion is deviated from said generally central axis.

49.(Cancelled.)

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50.(Previously Added) Apparatus as defined in Claim 47 wherein the extreme end of said free end portion of each of said contact members extends a sufficient distance to contact a respective terminal ball between the center of the terminal ball and the face of the device from which such terminal ball depends.

51.(Previously Added) Apparatus as defined in Claim 47 further comprising spacers disposed adjacent said support face to at least partially locate a periphery of the ball grid array device in a lateral position relative to said on said support face.

52.(Previously Added) Apparatus for use with a ball grid array device of the type having an array of terminal balls extending therefrom, said apparatus comprising:

a support member having a support face for supporting thereon the ball grid array device, said support member having a stop for engaging the ball grid array device to locate the ball grid array device with respect to said support member;

a bending member having a plurality of apertures generally registered with the terminal balls when the ball grid array device is located with respect to said support member;

a base member;

a plurality of elongated contact members secured in said base member and extending from said base member, through respective ones of said apertures in said bending member and toward the ball grid array device, said elongated contact members each having contact ends extending so as to be positioned to a side of a respective terminal ball of said ball grid array device; and

a cam adapted for moving at least one of said bending member and said support member to thereby move the contact ends of said elongated contact members sideways into contact with respective terminal balls.

53.(Previously Added) The apparatus of Claim 52, wherein said support member is positioned over said bending member, and said bending member is positioned over said base member, and said contact ends of said elongated contact members extend

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5 into an area occupied by said support member, whereby when the ball grid array device rests on said support face and is engaged with said stop, said contact ends of said elongated contact members are adjacent respective terminal balls of the ball grid array device.

54.(Previously Added) The apparatus of Claim 53, wherein said support member includes in said area occupied by said support member, an array of windows, and each contact end of said contact members extends into a respective one of said windows.

55.(Previously Added) Apparatus as defined in Claim 52 wherein said free end portion of each of said contact members has a generally central axis and the extreme end of said end portion is deviated from said generally central axis.

5 56.(Previously Added) Apparatus as defined in Claim 52 wherein said cam contacts and moves only one of said bending member and said support member, and said apparatus further comprising spring means to urge said one of said bending plate and said support plate laterally with respect to the other of said bending plate and said support member.

57.(Previously Added) Apparatus as defined in Claim 52 herein the extreme end of said free end portion of each of said contact members extends a sufficient distance to contact a respective terminal ball between the center of the terminal ball and the face of the device from which such terminal ball depends.

58.(Previously Added) Apparatus as defined in Claim 52, wherein said stop comprises a spacer disposed adjacent said support face to at least partially locate a periphery of the ball grid array device laterally relative to with respect to said support face.

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VERSION WITH MARKINGS SHOWING CHANGES

In The CLAIMS

Please amend Claims 7 and 29 to read as follows:

7. (Amended) Apparatus as defined in claim [5] 1 further comprising spring means to said support member laterally with respect to said bending plate.

29. (Amended) Apparatus as defined in Claim [27] 23 further comprising spring means to urge said support member laterally with respect to said bending plate.